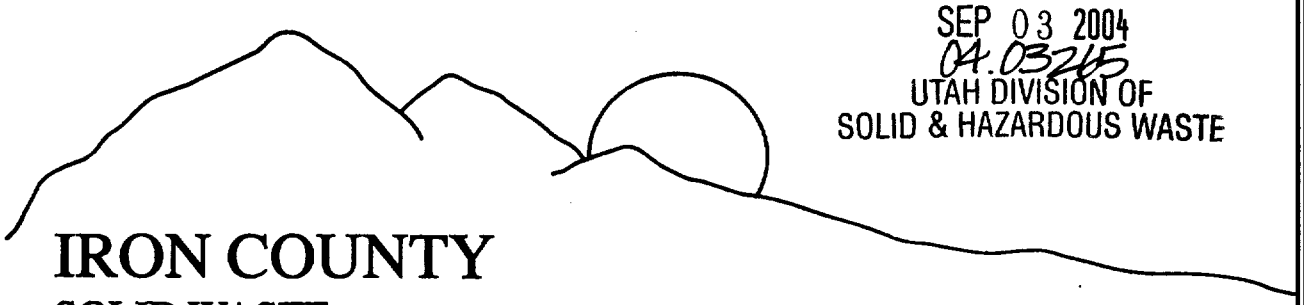

IRON COUNTY
SOLID WASTE

PAROWAN Class IVb
2004 LANDFILL REPERMIT APPLICATION

August 27, 2004

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UTAH DIVISION OF
SOLID & HAZARDOUS WASTE

REPERMIT APPLICATION TO OPERATE A CLASS IVb LANDFILL

Iron County Construction and Demolition Landfill (Parowan)

Submitted by:

IRON COUNTY
SOLID WASTE

Prepared by

IGES, INC.
4153 S. Commerce Drive
Salt Lake City, Utah 84107

August 27, 2004

ANNOTATED TABLE OF CONTENTS

Part **Title**

INTRODUCTION

This document presents an application to repermit and operate a construction and demolition landfill near Parowan, on land owned by the City of Parowan and operated by the Iron County Solid Waste (ICSW) personnel. The existing class IVb landfill (Parowan Landfill) is located southwest of Parowan and east of Highway 91. The Parowan Landfill is currently operated under permit number 9904 issued by the Utah Solid and Hazardous Waste Control Board.

The area to be permitted is in Section 22, Township 34 South, Range 9 West, Salt Lake Baseline and Meridian, Iron County, Utah. Drawing 1 (Appendix A) shows the location of the landfill.

Part I of this document duplicates the standard form outlining General Information pertaining to the site. Part II is a General Report that includes a facility description and landfill operations plan. Part III is the Technical Report and includes details on the design of the site closure, post-closure care and financial assurance.

REPERMIT APPLICATION TO OPERATE A CLASS IVb LANDFILL

Iron County Construction and Demolition Landfill (Parowan)

PART I – GENERAL INFORMATION

Part I General Information APPLICANT: PLEASE COMPLETE ALL SECTIONS.

I. Landfill Type		II. Application Type		
☐ Class IVa ☒ Class IVb ☐ Class VI		☐ New Application ☒ Renewal Application		☐ Facility Expansion ☐ Modification

For Renewal Applications, Facility Expansion Applications and Modifications Enter Current Permit Number 9904

III. Facility Name and Location

Legal Name of Facility
Iron County Class IVb Landfill (Parowan)

Site Address (street or directions to site)				County
Approximately 1.0 mile southwest of Parowan				Iron
City Parowan	State UT	Zip Code 84761	Telephone	
Township 34	Range 7	Section(s) 22	Quarter/Quarter Section	Quarter Section
Main Gate Latitude degrees 37 minutes 49 seconds 43		Longitude degrees 112 minutes 51 seconds 9		

IV. Facility Owner(s) Information

Legal Name of Facility Owner
Parowan City
Address (mailing)
P.O. Box 743

City	State	Zip Code	Telephone
Parowan	UT	84761	(435) 477-1032

V. Facility Operator(s) Information

Legal Name of Facility Operator
Iron County Solid Waste
Address (mailing)
P.O. Box 743

City	State	Zip Code	Telephone
Cedar City	UT	84720	(435) 865-7015

VI. Property Owner(s) Information

Legal Name of Property Owner

Address (mailing)

City	State	Zip Code	Telephone

VII. Contact Information

Owner Contact Kenneth Alan Wade	Title Supervisor/manager
Address (mailing) P.O. Box 743	
City Cedar City / State UT / Zip Code 84721 / Telephone 435-865-7015	
Email Address ironco@netutah.com	Alternative Telephone (cell or other)
Operator Contact Same as above	Title
Address (mailing)	
City / State / Zip Code / Telephone	
Email Address	Alternative Telephone (cell or other)
Property Owner Contact	Title
Address (mailing)	

City	State	Zip Code	Telephone
Email Address		Alternative Telephone (cell or other)	

Part I General Information (Continued)

VIII. Waste Types (check all that apply)

Waste Type	Combined Disposal Unit	Monofill Unit
☒ Construction & Demolition	☐	☐
☐ Tires	☐	☐
☒ Yard Waste	☐	☐
☐ Animals	☐	☐
☐ PCB's (R315-315-7(3) only)	☐	☐
☐ Other _____	☐	☐

Note: Disposal of dead animals must be approved by the Executive Secretary

IX. Facility Area

Facility Area	48.15	acres
Disposal Area	6	acres
Design Capacity		
Years	25	
Cubic Yards	236,000	
Tons	118,000	

X. Fee and Application Documents

Indicate Documents Attached To This Application ☐ Application Fee: Amount $

☐ Facility Map or Maps ☐ Facility Legal Description ☐ Plan of Operation ☐ Waste Description
☐ Ground Water Report ☐ Closure Design ☐ Cost Estimates ☐ Financial Assurance

Class VI Special Requirements

☐ Documents required by UCA 19-6-108(9) and (10)

I HEREBY CERTIFY THAT THIS INFORMATION AND ALL ATTACHED PAGES ARE CORRECT AND COMPLETE.

Signature of Authorized Owner Representative Name typed or printed	Title	Date
	Address	
Signature of Authorized Land Owner Representative (if applicable) Name typed or printed	Title	Date
	Address	
Signature of Authorized Operator Representative (if applicable) Kenneth A Wade Kenneth A Wade Name typed or printed	Title Supervisor	Date 8-31-2004
	Address P.O. Box 743 Cedar City	

REPERMIT APPLICATION TO
OPERATE A CLASS IVb LANDFILL

Iron County Construction and Demolition Landfill
(Parowan)

PART II - GENERAL REPORT

TABLE OF CONTENTS

1.0 - FACILITY DESCRIPTION

The Parowan Class IVb Construction and Demolition Landfill is located on land owned by the City of Parowan and operated by Iron County Solid Waste (ICSW). The Parowan landfill is located as indicated on Drawing 1 (Appendix A). The Parowan Landfill is utilized exclusively for the disposal of construction and demolition (C&D) related waste and the collection of recyclable materials (primarily metal). The Parowan Landfill (Landfill) will function as a Class IVb landfill in that it may accept over 20 tons per day of C&D waste while excluding all conditionally exempt small quantity generator hazardous waste. The Landfill is located immediately adjacent to the previously closed Parowan Municipal Landfill (PML). The topography surrounding the Landfill is defined by a narrow valley with gently sloping walls on the northern and southern edges. Due to the slight slope of the site, all site run-on is directed around the site and flows to the Parowan valley.

The main access road to the site has been paved for all-weather access. Access into the Landfill disposal area is via an improved and maintained dirt road. The facility is entirely fenced, with public access through the locking gate at the main entrance of the solid waste facility.

1.1 AREA SERVED

The Landfill primarily serves the residents of Iron County in the vicinity of Parowan. The majority of the solid waste disposal within Iron County takes place at the Armstrong and Lindsey Pits (ALP) west of Cedar City.

1.2 WASTE TYPES

Based upon the existing C&D waste stream and estimates of future trends; approximately 15 tons per day of C&D waste is expected to be delivered to the Landfill.

The waste diverted into the Landfill shall be limited to the following wastes:

- Yard Waste – brush, branches, clippings, leaves and grass.
- Construction Wastes – waste generated from construction and includes building materials used in construction. Construction related materials include packaging materials from

products, waste lumber, wallboard, boxes from appliances, empty paint cans, empty caulking tubes, and empty sealer and adhesive cans. "EMPTY" means that no more than 10% of the product remains inside the container.

- Demolition Wastes – waste generated from the destruction or remodeling of buildings and houses. Demolition Wastes may include furnaces, pipes, ducting and water heaters. Furniture and other materials that are not part of the building structure must be removed before demolition.
- Untreated wood, including pallets and crates
- Asphalt from roads and other surfaces

Wastes materials that are specifically prohibited from Class IVb landfills include the following:

- Household Wastes (Municipal Solid Waste)
- Contaminated Soils
- Friable asbestos
- Tanks of any kind
- Railroad ties
- Cardboard not directly generated from construction or demolition activities
- Furniture of all kind
- Metal not directly generated from construction or demolition activities
- Electronics of all kind
- Treated lumber

1.3 FACILITY HOURS

The operating hours for the facility are 10:00 a.m. to 6:00 p.m. year round. The facility is open Tuesday thru Saturday with the following holidays being observed:

- New Years Day
- Human Rights Day
- Presidents Day
- Memorial Day
- July 4th

- Pioneers Day
- Labor Day
- Columbus Day
- Veterans Day
- Thanksgiving Day
- Christmas Day

The following facility information is posted at the gate:

- Landfill Owner
- Days of Landfill Operation
- Hours of Landfill Operation
- Instructional Signs (no scavenging, no hazardous materials, dump in designated areas, etc.)
- Emergency Telephone Numbers

1.4 LANDFILL EQUIPMENT

The following equipment is on site and used in landfill operations:

- 963 Caterpillar Track Loader
- Equipment as needed from the ALP operations

1.5 LANDFILL PERSONNEL

The following briefly presents the responsibilities for all on-site landfill personnel at the Landfill:

Landfill Supervisor - The Supervisor is responsible for all matters relating to the Solid Waste program for Iron County; including landfill operations, drop boxes, and all recycling functions. The Supervisor is responsible that the landfill operations meet all Department of Solid and Hazardous Waste (DSHW) permit requirements. The Supervisor conducts regular facility inspections and monitors all landfill activities. The Supervisor is responsible for all operational

documentation including the annual reports to DSHW. The Supervisor is responsible for all persons on the site including visitors.

Landfill Technicians – The landfill technicians are responsible for all day-to-day activities at the landfill. These responsibilities include, waste acceptance and placement, traffic control, visual inspection of incoming waste, random waste screening operations, and general construction as is pertains to landfill operations. The landfill technicians serve as both equipment operators and gate attendants.

2.0 - LEGAL DESCRIPTION

The Class IVb landfill is located on property currently owned by City of Parowan. The Class IVb facility is located in Township 34 South, Range 9 West, in Section 22, Salt Lake Baseline Meridian, Iron County, Utah.

A boundary survey with the legal description for the property is included as Appendix B. A copy of a tax notice from the Iron County Assessor's office is also included as proof of ownership.

3.0 – PAROWAN LANDFILL OPERATIONS PLAN

The Operation Plan for the Landfill has been written to address the requirements of Utah State Solid Waste Regulations and describes the proposed operations of the Parowan Class IVb Landfill. A more detailed separate document titled Operator's Manual - Iron County Landfill (prepared for the Class I and Class IVb operations in the Armstrong and Lindsey Pits) contains supplemental information regarding overall operating procedures associated with landfilling practices. The Operator's Manual for the ALP is not included with this document.

The general arrangement of the Landfill is as indicated on Drawing 2 (Appendix A). The following section details the operational specifics of the Landfill. Forms used to document the operations of the Landfill are included in Appendix C.

3.1 SCHEDULE OF CONSTRUCTION

The Landfill was constructed west of the closed PML. Parowan stopped accepting waste at the PML in July 1995 with the construction of the final cover being completed immediately thereafter. The Landfill commenced operation in the summer of 1999.

The construction and operation of the Landfill has been broken down into two Phases (Drawing 3 – Appendix A); Phase A will consist of placing C&D waste across the bottom of the excavated cells. Phase A will consist of 3 separate cells. Cell 1 was constructed next to the run-off control berm at the sites west side. Cell 2 was excavated from the southern half of Cell 1 eastward to the boundary of the PML. Cell 3 will be excavated north of Cell 2 between Cell 1 and the PML.

Phase B will systematically place C&D waste over Phase A. Phase B will consist of 3 cells (Cell 4, Cell 5, and Cell 6) starting with the placement of waste above Cell 1, progressing to waste disposal over Cell 2 and finally over Cell 3.

The operation of the Landfill will be continual in nature, the Phased arrangement is more of a design concept rather that actual operational milestones. Based on the projected waste stream, Phase A will provide operational airspace for approximately an additional 8 years, with design capacity being reached in approximately 2013. Phase B will commence operation as Phase A reaches capacity and last until approximately 2029. The landfill capacities were initially based upon a C&D waste stream starting at 3,900 tons per year and escalating at 5% each year thereafter. Actual data suggests that there has been no escalation of the yearly waste stream. Daily waste delivered to the Landfill is averaging approximately 15 tons.

3.2 DESCRIPTION OF WASTE HANDLING PROCEDURES

3.2.1 General

The waste control program is designed to detect and deter attempts to dispose of hazardous, municipal solid waste or other unacceptable wastes at the Landfill. The program is designed to protect the health and safety of employees, customers, and the general public, as well as to protect against the contamination of the environment.

The Landfill is open for public and private disposal. Signs are posted along the Landfill access road to clearly indicate (1) the types of wastes that are accepted at the C&D facility; (2) the types of wastes not accepted at the site; and (3) the penalty for illegal disposal.

- All vehicles delivering wastes to the site will be met at the gate by a Landfill Technician. The Landfill Technician will inquire as to the contents of each incoming load and enter the description of the vehicle and waste content into the Daily Log.
- The vehicle will be directed to either the drop off facility, working face, ALP operations, or rejected due to unacceptable materials.
- Any vehicle suspected of carrying unacceptable materials (liquid waste, sludges, or hazardous waste) will be prevented from entering the disposal areas unless the driver can provide evidence that the waste is acceptable for disposal at the site. ICSW reserves the right to refuse service to any suspect load. Vehicles carrying unacceptable materials will be required to exit the site without discharging their loads.

- Loads will be regularly surveyed at the tipping area. If a discharged load contains inappropriate or unacceptable material, the discharger will be required to reload the material and remove it from the Landfill. If the discharger is not immediately identified, the area where the unacceptable material was discharged will be cordoned off. Unacceptable material will be moved to a designated area for identification and preparation for proper disposal.

No open burning or smoking is allowed near the work face. Occasional burning of tree branches will be conducted on landfill support areas away from the working face as the need arises. The burning of tree branches is expected to be infrequent and in limited quantities.

3.2.2 Waste Acceptance Records

A monthly summary of all landfill transactions will be created and kept on file at the Landfill or at the ALP operations. Any or all transactions may be retrieved as necessary.

3.2.3 Waste Disposal

The geometry of the Landfill is such that the waste will be pushed upslope into place. Once the bottom 20 feet of the excavation is filled, then the C&D wastes will be dumped at the toe of the work face when possible and spread up the slope in one to two foot lifts, keeping the slope at a typical five to one (horizontal to vertical) configuration.

Work face dimensions will be kept narrow enough to minimize blowing litter and reduce the amount of soil needed for cover.

Typically the track loader is operated with the bucket facing uphill. Equipment operations across the slope are avoided to minimize the potential of equipment tipping over. In addition to safety concerns, a toe of slope to crest of slope working orientation provides the following benefits:

- Increases effective compaction.

- Increased visibility for waste placement and compaction.
- More uniform waste distribution.

The wastes will be compacted by making three to five passes up and down the slope. Compaction reduces litter, differential settlement, and the quantities of cover soil needed. Compaction also extends the life of the site, reduces unit costs, and leaves fewer voids to help reduce vector problems. Care is taken that no holes are left in the compacted waste. Voids are filled with additional waste as they develop. Cover soils will be applied to all areas of the active cell at a minimum of every 30 days.

3.2.4 Special Wastes – Wastes Excluded from the Landfill

3.2.4.1 Used Oil and Batteries

Used Oil and Batteries are not accepted at the Landfill. ICSW provides the public the opportunity to drop off used oil as part of the ALP operations. The ALP operation west of Cedar City is a "Used Oil Recycle Center".

3.2.4.2 Appliances

White goods are accepted at the Landfill and are separated for recycling. All appliances containing refrigerants are segregated in a separate area. Refrigerant is removed and the appliances are loaded into the metal bin for recycling. Used cars are accepted and stored near the facility entrance then transferred to the ALP operations.

3.2.4.3 Tires

The Landfill accepts small quantities of tires from the general public. Commercial haulers are prohibited from disposing of tires. A total of four passenger tires are accepted from the public with each load.

3.2.4.4 Dead Animals

Dead animals are not accepted at the Landfill. All dead animals are directed to the ALP operations.

3.2.4.5 Asbestos Waste

Asbestos waste is not accepted at the Landfill.

3.2.4.6 Grease By-Products

Grease By-Product wastes are not accepted at the Landfill.

3.2.4.7 Sewer Sludge

Sewer sludge of any nature (wet or dry) is not accepted at the Landfill.

3.3 WASTE INSPECTION

3.3.1 Landfill Spotting

Learning to identify and exclude prohibited and hazardous waste from the Landfill is required to maintain the Class IVb classification and necessary for the safe operation of the Landfill. The Landfill Technicians are required to receive initial and periodic hazardous waste screening inspection training. Waste screening certificates of the training received are kept in the personnel files.

3.3.2 Random Waste Screening

Random inspections of incoming loads are conducted according to the schedule established by the Landfill Supervisor. If frequent violations are detected, additional random checks are scheduled at the discretion of the Landfill Supervisor.

If a suspicious or unknown waste is encountered, the Landfill Technician proceeds with the waste screening as follows:

- The driver of the vehicle containing the suspect material is directed to the waste screening area.
- The waste screening form (Appendix C) is completed.

- Protective gear is worn (leather gloves, steel-toed boots, and hard hat).
- The suspect material is spread out with landfill equipment or hand tools and visually examined. Suspicious marking or materials, like the ones listed below, are investigated further:
  - Containers labeled hazardous
  - Material with unusual amounts of moisture
  - Biomedical (red bag) waste
  - Unidentified powders, smoke, or vapors
  - Liquids, sludges, pastes, or slurries
  - Asbestos or asbestos contaminated materials
  - Batteries
  - Other wastes not accepted by the Landfill

- The Landfill Supervisor is called if unstable wastes that cannot be handled safely or radioactive wastes are discovered or suspected.

3.3.3 Removal of Hazardous or Prohibited Waste

Should hazardous or prohibited wastes be discovered during random waste screening or during tipping, the waste is removed from the Landfill as follows:

- The waste is loaded back on the hauler's vehicle. The hauler is then informed of the proper disposal options.
- If the hauler or generator is no longer on the premises and is known, they are asked to retrieve the waste and informed of the proper disposal options.
- The Landfill Supervisor arranges to have the waste transported to the proper disposal site and then bill the original hauler or generator.

A record of the removal of all hazardous or prohibited wastes will be kept in the site operational records.

3.3.4 Hazardous or Prohibited Waste Discovered After the Fact

If hazardous or prohibited wastes are discovered at the Landfill after the hauler has left the premises, the following procedure will be used to remove them:

- Access to the area is restricted.
- The Landfill Supervisor is immediately notified.
- The Landfill Technician removes the waste from the working face if it is safe to do so.
- The waste is isolated in a secure area of the Landfill and the area cordoned off.
- Local authorities are notified as appropriate.

The DSHW, the hauler (if known), and the generator (if known) will be notified within 24 hours of the discovery. The generator (if known) is responsible for the proper cleanup, transportation, and disposal of the waste.

3.3.5 Notification Procedures

The following agencies and people are contacted if any hazardous materials are discovered at the Landfill:

- Alan Wade, Landfill Supervisor ..... (435) 865-7015
- Iron County Health Department..... (435) 586-2437
- Executive Secretary, DSHW..... (801) 538-6170
- Iron Co. Fire Department..... (435) 586-2964

A record of conversation is completed as each of the entities is contacted. The record of conversation is kept in the site operational records.

3.4 FACILITY MONITORING AND INSPECTION

3.4.1 Groundwater

The Landfill is not required to monitor groundwater.

3.4.2 Surface Water

Run-on diversion structures have been installed around the perimeter of the Landfill site during the initial construction. The diversion structures include both ditches and berms. Potential run-on waters will be diverted away from the working face of the Landfill.

In general, surface water that falls within the landfill excavation will naturally be routed into the bottom of the excavation. The potential run-on has been directed away from the Landfill.

Run-off from the final cover will be managed by a combination of berms and ditches. The berms will be placed to divert the water around the active area to ditches. The Drawings (Appendix A) illustrate the locations and details of the run-off control structures.

ICSW staff will inspect the drainage system monthly. Temporary repairs will be made as required to any observed deficiencies until permanent repairs can be scheduled. ICSW or a licensed general contractor will repair drainage facilities as required.

3.4.3 Leachate Collection

The Landfill is not required to collect or monitor leachate.

3.4.4 Landfill Gas

The Landfill is not required to monitor landfill gas.

3.4.5 General Inspections

Routine inspections are necessary to prevent malfunctions and deterioration, operator errors, and discharges that may cause or lead to release of wastes to the environment or a threat to human health. Landfill Technicians are responsible for conducting and recording routine inspections of the landfill facilities according to the following schedule:

- Landfill Technicians (when operating equipment) perform pre-operational inspections of all equipment daily. A post-operational inspection is performed at the end of each shift while equipment is cooling down.
- All equipment is on a regular maintenance schedule. A logbook is maintained on each piece of equipment and any repairs and comments concerning the inspection are contained in the log. Oil samples are pulled when each machine is serviced and results are recorded in the machine log.
- Facility inspections are completed on a quarterly basis. Any needed corrective action items are recorded and the Landfill Technicians complete needed repairs. If a problem is of an urgent nature, the problem is corrected immediately.

3.5 CONTIGENCY AND CORRECTIVE ACTION PLANS

The Iron County Fire Department is contacted in all cases where hazardous materials are suspected to be involved. The following sections outline procedures to be followed in case of fire, explosion, run-on/run-off contamination, or suspected groundwater contamination:

3.5.1 Fire

The potential for fire is a concern in any landfill. The Landfill follows a waste handling procedure to minimize the potential for a landfill fire. If any load comes to the landfill on fire, the driver of the vehicle is directed to a pre-designated area away from the working face. The burning waste is unloaded, spread out, and immediately covered with sufficient amounts of soil to smother the fire. Once the burning waste cools and is deemed safe, the material will then be incorporated into the working face. Some loads coming to the landfill may be on fire but not detected until after being unloaded at the working face. If a load of waste that is on fire is unloaded at the working face, the load of waste is immediately removed from the working face, spread out, and covered with soil.

The Iron County Fire department is called if it appears that landfill personnel and equipment cannot contain any fire at the landfill. The Iron County Fire department is also called if a fire is burning below the landfill surface or is difficult to reach or isolate.

In case of fire, the Landfill Supervisor is notified immediately. A written report detailing the event is placed in the operating record within seven days, including any corrective action taken.

3.5.2 Explosion

If an explosion occurs or seems possible, all personnel and customers are accounted for and the Landfill is evacuated. Corrective action is immediately evaluated and implemented as soon as practicable.

The Landfill Supervisor is notified immediately and the Iron County Fire department is called. The Executive Secretary is notified immediately.

3.5.3 Failure of Run-On/Run-Off Containment

The purpose of the run-on/run-off control systems is to manage the stormwater falling in or near the Landfill. Were possible, water is diverted away from the Landfill by utilizing ditches and berms. These ditches are inspected on a regular basis and repaired as needed. All precipitation falling near the Landfill will flow around the perimeter towards the Parowan valley.

If a run-off ditch or berm fails, temporary berms or ditches will be constructed until a permanent run-off structure can be repaired.

Any temporary berms or other structures are checked at least every 2 hours during the storm event until storm water flow has stopped. Permanent improvements or repairs are made as soon as practicable.

The Landfill Supervisor is notified immediately if a failure of the run-off systems is discovered. The event is fully documented in the operating record, including corrective action within 14 days.

3.5.4 Groundwater Contamination

The Landfill has no ground water monitoring wells. If ground water contamination is ever suspected, studies to evaluate the potential contamination will be conducted and the existence

and/or extent of contamination will be documented. This program may include the installation of ground water monitoring wells. A ground water monitoring program would be developed and corrective action taken as deemed necessary, with the approval of the Executive Secretary.

3.6 CONTINGENCY PLAN FOR ALTERNATIVE WASTE HANDLING

The most probable reason for a disruption in the waste handling procedures at the Landfill will be weather related. The Landfill may close during periods of inclement weather such as high winds, heavy rain, snow, flooding, or any other weather-related condition that would make travel or operations dangerous. The Landfill may also close for other reasons like fire, natural disaster, etc. In general, the ICSW staff minimizes the possibility of disruption of waste disposal services from an operational standpoint.

In case of equipment failure, replacement equipment will be mobilized from the ALP operations, or leased to continue operations while repairs are being made.

3.7 MAINTENANCE PLAN

3.7.1 Groundwater Monitoring System

The Landfill is currently exempt from requirements for groundwater monitoring. As a result, no groundwater monitoring system is planned.

3.7.2 Leachate Collection and Recovery System

The Landfill is currently exempt from requirements for leachate collection. As a result, no leachate collection and recovery system is planned.

3.7.3 Gas Monitoring System

The Landfill is currently exempt from requirements for a landfill gas monitoring system. No gas collection system is planned.

3.8 DISEASE AND VECTOR CONTROL

The vectors encountered at the Landfill are flies, birds, mosquitoes, rodents, skunks, and snakes. Due to the rural location of the landfill, stray house pets are occasionally encountered at the landfill. The program for controlling these vectors is as follows:

3.8.1 Insects

The elimination of breeding areas is essential in the control of insects. Landfill will minimize the breeding areas by covering the waste with soil at a minimum of every 30 days and maintaining surfaces to reduce ponded water.

3.8.2 Rodents

Reducing potential food sources minimizes rodent populations at the landfill. Due to the nature of the C&D wastes, no significant numbers of mice or rats have been observed.

In the unlikely event of a significant increase in the number of rodents at the landfill, a professional exterminator will be contacted. The exterminator would then establish an appropriate protocol for pest control in accordance with all county, state and federal regulations.

3.8.3 Birds

The Landfill has had minimal problems with birds. Good land filling practices of waste compaction, daily covering of working faces, the minimization of ponded water, and the nature of the waste at the site has alleviated most of the bird problems. If the occasional need arises, the birds will be encouraged to leave by using cracker and whistler shells.

3.8.4 Household Pets

Because of the Landfills location, some stray cats and dogs may wander onto Landfill property. When stray animals are encountered (and can be caught), they are turned over to the animal shelter. If the Landfill Technicians are unable to apprehend the animals, they are chased off the property.

3.8.5 Wildlife

The Landfill has a variety of wildlife located on or near the landfill property. Wildlife includes deer, snakes, foxes, skunks, and coyotes. If problem skunks or snakes are encountered, they will be exterminated. If other site wildlife becomes a problem, the Landfill will coordinate with the Division of Wildlife Resources to provide methods and means to eliminate the problem.

In the event that any of these vectors become an unmanageable problem, the services of a professional exterminator will be employed.

3.8.6 Fugitive Dust

The roads leading to the landfill are paved, however; access roads to the Landfill are improved dirt/gravel roads and will need occasional dust control measures. General landfill activities, site access by vehicles compounded by the occasional high wind may present a fugitive dust problem. If the dust problem elevates above the "minimum avoidable dust level", the landfill applies water to problem areas.

3.8.7 Litter Control

The nature of the C& D waste received at the Landfill is such that will naturally minimize the blowing of litter. However; due to the nature of landfilling operations, blowing litter will still be an occasional problem. Landfill personnel perform routine litter cleanup to keep the landfill and surrounding properties clear of windblown debris.

Whenever possible, the working face is placed down wind so that blowing litter is worked into the landfill face. During windy conditions, landfill personnel minimize the spreading of the waste to reduce the amount of windblown debris.

3.9 RECYCLING

Currently, recycling activities are conducted in conjunction with the ongoing C&D operations. Metals, junk cars, and appliances are accepted at the Landfill and are transported to the ALP operations for recycling.

3.10 TRAINING PROGRAM

As part of the initial training of new employees, the ALP Landfill Operator's Manual is required reading. All personnel are required to review the approved permit annually.

All personnel associated with the operation of the landfill receive site specific training annually. The "Sanitary Landfill Operator Training Course" offered by the Solid Waste Association of North America (SWANA) is required by all employees. SWANA waste screening is also required of all Landfill Technicians. Certificates of completion are kept in personnel files.

Regular safety and equipment maintenance training sessions are held to ensure that employees are aware of the latest technologies and that good safety practices are used at all times.

3.11 RECORDKEEPING

An operating record is maintained as part of a permanent record on the following items:

- Number of vehicles entering the landfill and types of wastes received on a monthly basis. Daily logs forms are submitted to the ALP operations for processing.
- Deviations from the approved Plan of Operation.
- Personnel training and notification procedures.
- Random load inspection log.

3.12 SUBMITTAL OF ANNUAL REPORT

ICSW will submit a copy of its annual report to the Executive Secretary by March 1 of each year for the most recent calendar or fiscal year of facility operation. The annual report will include facility activities during the previous year and will include, at a minimum, the following:

- Name and address of facility.
- Calendar or fiscal year covered by the annual report.
- Annual quantity, in tons or volume, in cubic yards, and estimated in-place density in pounds per cubic yard of solid waste.

- Annual update of required financial assurances mechanism pursuant to Utah Administrative Code.
- Training programs completed.

3.13 INSPECTIONS

The Landfill Supervisor, or his/her designee, will inspect the facility to minimize malfunctions and deterioration, operator errors, and discharges that may cause or lead to the release of wastes to the environment or to a threat to human health. These inspections are conducted on a quarterly basis, at a minimum. An inspection log (Appendix C) is kept as part of the operating record. This log includes at least the date and time of inspection, the printed name and handwritten signature of the inspector, a notation of observations made, and the date and nature of any repairs or corrective actions. Inspection records are available to the Executive Secretary or an authorized representative upon request.

3.14 RECORDING WITH COUNTY RECORDER

Plats and other data, as required by the County Recorder, will be recorded with the Iron County Recorder as part of the record of title no later than 60 days after certification of closure.

3.15 STATE AND LOCAL REQUIREMENTS

The Landfill will maintain compliance with all applicable state and local requirements including zoning, fire protection, water pollution prevention, air pollution prevention, and nuisance control.

3.16 SAFETY

Landfill personnel are required to participate in an ongoing safety program. This program complies with the Occupational Safety and Health Administration (OSHA), and the National Institute of Occupational Safety and Health (NIOSH) regulations as applicable. This program is designed to make the site and equipment as secure as possible and to educate landfill personnel about safe work practices.

3.17 EMERGENCY PROCEDURES

In the event of an accident or any other emergency situation, the Landfill Technician immediately contacts the Landfill Supervisor and proceeds as directed. If the Landfill Supervisor is not available, the Landfill Technicians calls the appropriate emergency number posted by the telephone. The emergency telephone numbers are:

- Iron County Central Dispatch 911
- Fire Department ..... (435) 586-2964
- Sheriff's Office ..... (435) 867-7500
- Cedar City Hospital ..... (435) 586-6587
- Alan Wade, Landfill Supervisor ..... (435) 586-7015

REPERMIT APPLICATION TO OPERATE A CLASS IVb LANDFILL

Iron County Construction and Demolition Landfill (Parowan)

PART III - TECHNICAL REPORT

TABLE OF CONTENTS

1.0 – ENGINEERING REPORT

1.1 CELL DESIGN

The Parowan Landfill (Landfill) has been broken into two Phases (A & B). The Permit Drawings show the two Phases in relation to the topography of the site. Phase A is the bottom or initial layer deposited in the excavated (below grade) portions of the Landfill; Phase B is the upper layer of waste placed over Phase A (above grade). The bottom elevation of Phase A is approximately 20 feet below the surrounding elevation. The Landfill site is located at approximately 5,460 feet above mean sea level.

The operation of the Landfill is being conducted with Phase A divided into three separate Cells; with the first Cell (1) being constructed along the run-off berm at the western side of the site. The Cell 2 excavation will provide operational cover for the waste being placed in Cell 1. The Cell 3 excavation will be stockpiled for use as operational cover for the waste to be placed in Cell 2 and for use in all Phase B Cells.

Once Cells 1, 2, and 3 are to final grade; the second Phase of the Landfill will commence operation. Phase B consists of the final 3 Cells of the Landfill. Cell 4 will be constructed over Cell 1; Cell 5 over Cell 2 and Cell 6 over Cell 3. Drawing 3 (Appendix A) shows the relative location of each Cell within each Phase.

1.1.1 Fill Method

As described in Section 3.2.3 of Part II – General Report, waste has been dumped at the toe of the working face and pushed uphill into place. The C&D wastes will continue to be dumped at the toe of the work face when possible and spread up the slope in one to two foot lifts, keeping the slope at a typical five to one (horizontal to vertical) configuration. The C&D wastes will then be compacted by making three to five passes up and down the slope.

1.1.2 Interim Cover

Interim cover will be placed in compliance with the DSHW Class IV requirements. Section R315-305 stipulates that timbers, wood, and other combustible waste be covered as needed to avoid a fire.

1.1.3 Final Cover

As specified in Rule R315-305-5, the final cover will consist of a minimum of two feet of soil, the upper six inches of which will be topsoil material capable of sustaining native vegetation. The topsoil layer will then be seeded with indigenous grasses and other shallow rooted vegetation.

1.1.4 Final Cover Elevations

As discussed previously, the maximum elevation for the final cover is planned to be approximately 20 feet above surrounding grade along the west edge. The cover will slope upward at approximately 5% to the east to a final height of approximately 34 feet above the surrounding grade. The side slopes of the final cover is planned to be 4:1 (horizontal to vertical) with most of the upper portion of the Landfill being constructed to a uniform 5% slope. These slopes should allow for some settlement without compromising the run-off characteristics of the cover soil. Drawing 4 (Appendix A) details the topography of the final cover.

1.2 DESIGN AND LOCATION OF RUN-ON/RUN-OFF CONTROL SYSTEMS

Run-on control berms have been installed to intercept potential run-on precipitation from areas above the Landfill. Given the existing topography of the Landfill, precipitation falling into the Phase A excavated area (below the run-on control structures) will naturally drain towards the bottom of the Landfill during the filling of Phases A. The run-on and run-off control berms constructed are as indicated on Drawing 4 (Appendix A).

As the landfill reaches an elevation where the storm water will drain from the Landfill area, additional perimeter ditches and berms will be constructed to route the water from the Landfill's operational face but maintain the water on-site. The initial design of these ditches was based on a 25-year 24-hour storm event of 2.3 inches and a run-off curve number of 73. TR55 computer software indicated a peak discharge of 2.23 cubic feet per second (cfs) from the 115 acres. IGES further analyzed the time on concentration of the design storm event and applied the entire storm event in approximately 40 minutes. The peak discharge increased to 28.26 cubic feet per second. Based upon the existing berms and the slope of the site; the existing berms will provide adequate hydrologic capacity.

1.3 REGIONAL GEOLOGY

The Landfill is located along the transition zone between two major physiographic provinces, namely the Basin and Range Province to the west and northwest and the Colorado Plateau to the east. Because the site is located in a physiographic transition zone, the general site vicinity is composed of a diverse mixture of topographic and geologic features. The Basin and Range Province is characterized by north-south trending block-faulted mountains separated by intermountain valleys. These valleys contain relatively thick deposits of semi-consolidated and unconsolidated alluvial material. The Colorado Plateau is characterized by high plateaus, which contain more continuous geologic strata. These plateaus were not as widely affected by the prevalent large-scale normal faulting that characterizes the Basin and Range Province. The transition zone between these two provinces contains geologic and physiographic features common to both provinces.

1.4 SITE SOILS

Test pits excavated in conjunction with the development of the Landfill indicate that the site is predominantly sands and gravels. Logs of test pits are included in Appendix D.

1.5 FLOODPLAIN

The Landfill is not located in a floodplain.

1.6 WETLANDS

The Landfill is not located in or near wetlands.

1.7 GROUNDWATER

The depth to groundwater; measured in a culinary well approximately ½ mile north of the Landfill; is greater than 200'.

2.0 – CLOSURE PLAN

2.1 CLOSURE SCHEDULE

The Landfill will be closed in two operations; the first as the west half of Phase B is to final grade; and the last once the entire Landfill is to final grade. As indicated in Part II – General Report, the Phases have been designated to facilitate access, development and design. Based on facility life calculations using a zero percent growth rate, closure is expected around the year 2029.

2.2 DESIGN OF FINAL COVER

As discussed previously, the final cover will consist of a minimum of two feet of soil six inches of which will consist of a topsoil material. The slopes of the side slopes of the final cover will be no steeper than a 4:1 (horizontal to vertical) with no portion of the final cover less than a 5% slope. The cover soil will be seeded with indigenous grasses.

2.3 CAPACITY OF SITE IN VOLUME AND TONNAGE

The Landfill capacity and projected life by phase are presented in the following summary table:

ACTIVE PHASE	YEAR	ESTIMATED DAILY C&D WASTE (Tons)	DAYS OF OPERATION	ESTIMATED YEARLY C&D WASTE (Tons)	ESTIMATED YEARLY C&D WASTE (Cu. Yds.)	CUMULATIVE WASTE (Cubic Yards)	REMAINING LANDFILL CAPACITY (Cu. Yds.)
A	1999	15	88	1,320	2,640	2,640	236,360
A	2000	15	260	3,900	7,800	10,440	228,560
A	2001	15	260	3,900	7,800	18,240	220,760
A	2002	15	260	3,900	7,800	26,040	212,960
A	2003	15	260	3,900	7,800	33,840	205,160
A	2004	15	260	3,900	7,800	41,640	197,360
A	2005	15	260	3,900	7,800	49,440	189,560
A	2006	15	260	3,900	7,800	57,240	181,760
A	2007	15	260	3,900	7,800	65,040	173,960
A	2008	15	260	3,900	7,800	72,840	166,160
A	2009	15	260	3,900	7,800	80,640	158,360
A	2010	15	260	3,900	7,800	88,440	150,560
A	2011	15	260	3,900	7,800	96,240	142,760

A	2012	15	260	3,900	7,800	104,040	134,960
A	2013	15	260	3,900	7,800	111,840	127,160
B	2014	15	260	3,900	7,800	119,640	119,360
B	2015	15	260	3,900	7,800	127,440	111,560
B	2016	15	260	3,900	7,800	135,240	103,760
B	2017	15	260	3,900	7,800	143,040	95,960
B	2018	15	260	3,900	7,800	150,840	88,160
B	2019	15	260	3,900	7,800	158,640	80,360
B	2020	15	260	3,900	7,800	166,440	72,560
B	2021	15	260	3,900	7,800	174,240	64,760
B	2022	15	260	3,900	7,800	182,040	56,960
B	2023	15	260	3,900	7,800	189,840	49,160
B	2024	15	260	3,900	7,800	197,640	41,360
B	2025	15	260	3,900	7,800	205,440	33,560
B	2026	15	260	3,900	7,800	213,240	25,760
B	2027	15	260	3,900	7,800	221,040	17,960
B	2028	15	260	3,900	7,800	228,840	10,160
B	2029	15	260	3,900	7,800	236,640	2,360

Approximate Initial Waste Disposal Capacity (Cubic Yards) = 239,000
Gross Air Space is approximately 281,000 Cubic Yards
Net Air Space is approximately 239,000 Cubic Yards based upon a 15% reduction to allow for cover soils
Conversion of tons of waste to Cubic Yards of waste is based upon an estimated conversion rate of 1,000 pounds per one Cubic Yard

2.4 FINAL INSPECTION

A final inspection will be performed at the Landfill site at the termination of landfilling activities. The final inspection will determine if the Landfill meets all the closure requirements as outlined in the permit and closure plans. The final inspection will be performed by both ICSW and State of Utah DSHW personnel.

3.0 – POST-CLOSURE CARE PLAN

3.1 SITE MONITORING

There are no post-closure monitoring requirements for groundwater or gas at the Landfill since it is a Class IVb facility. However, other physical aspects of the Landfill will be monitored on a quarterly basis.

Landfill topography shall be visually checked for depressions that could result in ponding or rapid erosion. Irregularities in the surface of the final cover will be regraded and revegetated as needed to protect the surface from erosion and to eliminate ponding.

Side slopes will be maintained or reestablished with a maximum gradient of 4:1 and the top slopes will be maintained at no less than 5% to prevent ponding. The frequency of monitoring may be reduced only after a successful demonstration to the Executive Secretary that the closed Landfill has stabilized.

During post-closure, run-off from the covered landfill will be directed toward ditches constructed to collect and transport runoff to natural drainages west and northwest of the site. The ditches will be inspected quarterly through the post-closure period. Repairs to the ditches will be completed as part of the maintenance activities.

3.2 CHANGES TO RECORD OF TITLE, LAND USE AND ZONING

The Iron County Recorder will be provided plats and a statement of fact concerning the location of any disposal site no later than 60 days after certification of closure. If necessary, the closed Landfill will be rezoned to conform to the existing Iron County zoning regulations after final closure. A description of the Landfill history and filled areas will be permanently appended to the record of title. Land use restrictions will be assigned to the site in compliance with existing regulations for closed landfills at the time of closure.

3.3 MAINTENANCE

Post-closure maintenance activities will be designed and implemented under the direction of a licensed professional engineer in response to results of inspections. Design decisions will be made after the first post-closure quarterly inspection and implemented within 30 days after

identification of maintenance issues. Results of post-closure maintenance shall be reported to the Executive Secretary by a professional engineer licensed in the state of Utah.

Because of the arid climate in Iron County, maintenance of final covers and run-on/run-off systems should be minimal. Final cover and control structures will be inspected quarterly as indicated previously.

Run-on/run-off control structures and final covers could be damaged by an unusually intense storm. Consequently, an unscheduled inspection will be required after any occurrence of a 25-year storm event within a five-mile radius of the site. If the post-storm inspection discloses damage, it will be appraised by a licensed engineer. The engineer will solicit bids if necessary and supervise repairs completed by Iron County or a licensed contractor. Funds for payment for the repair work will be disbursed from the Financial Assurance Plan after approval by the Executive Secretary.

3.4 POST-CLOSURE CONTACTS

Iron County Courthouse ..... (435) 477-8300

4.0 – FINANCIAL ASSURANCE

4.1 CLOSURE COSTS

The Parowan Landfill is planned to be closed in two separate events. After the western half of Phase B is to final grade; the first of the closure events will take place. The second closure event will be concurrent with the filling of the eastern half of Phase B to final grade. Due to the operational nature of the landfill; the largest area of the Landfill to be open will be the entire footprint of Phase B. The closure cost estimates are based on the cost to close the largest area, including the cost of obtaining, moving and placing the cover material, final grading, placing topsoil, fertilizing and seeding.

4.2 POST CLOSURE CARE COSTS

The post-closure estimate must be the cost for completing care reasonably expected during the 30-year post-closure period. These tasks include site inspections, maintenance, and record keeping.

4.3 FINANCIAL ASSURANCE MECHANISM

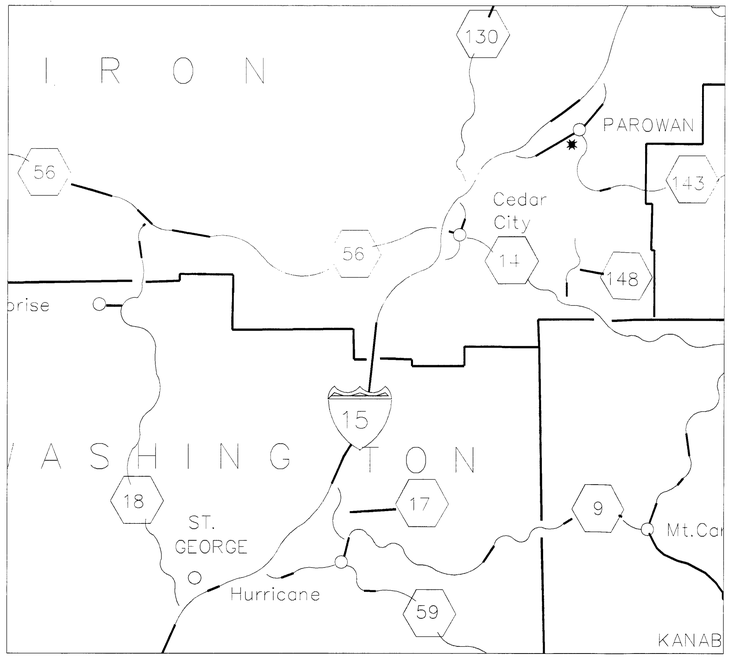
Iron County intends to comply with the financial assurance requirements by demonstrating financial ability based on the local government financial test. Iron County will submit the required financial information in a separate submittal. Detailed financial assurance costs are presented in Appendix E.

APPENDIX A

PAROWAN LANDFILL CLOSURE AND POST-CLOSURE COSTS

West Half Phase B Closure Costs - 2022		
Section 1.0 - Engineering	$4,200	
Section 2.0 - Construction	$29,215	
10% Contingency	$3,342	
Subtotal		$36,757
East Half Phase B Closure Costs - 2029		
Section 1.0 - Engineering	$9,700	
Section 2.0 - Construction	$31,215	
10% Contingency	$4,092	
Subtotal		$45,007
Landfill Post-Closure Costs (30 years)		$20,460
TOTAL LANDFILL CLOSURE AND POST-CLOSURE COSTS		$102,223

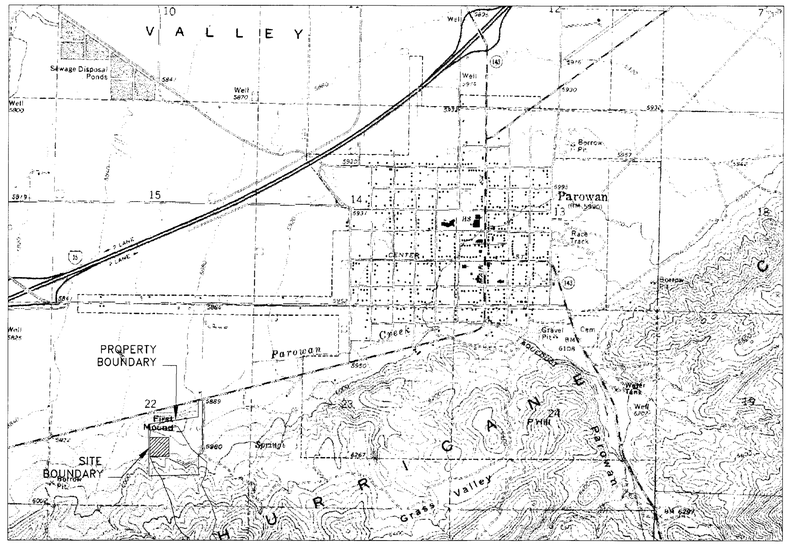
IRON COUNTY CLASS IVb LANDFILL PAROWAN, UT



LOCATION MAP

0 1000 2000 4000
SCALE IN FEET

VICINITY MAP



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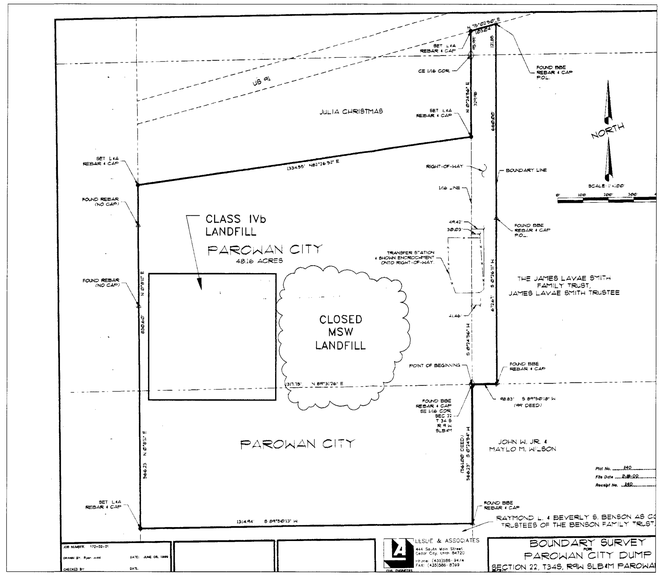
SCALE IN FEET

INDEX

SITE MAP



0 150 300 600
SCALE IN FEET

PROPERTY BOUNDARY FROM SURVEY BY LESLIE AND ASSOCIATES (1999)

IRON COUNTY SOLID WASTE
3127 N IRON SPRINGS ROAD
CEDAR CITY, UT 84720
(435) 865-7015

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MARK	DATE	DESCRIPTION
	8/27/04	PERMIT
	8/9/04	DRAFT PERMIT

ISSUE:

SHEET TITLE
IRON COUNTY CLASS IVb
TITLE SHEET

EBAR
CAP)

REBAR
CAP)

PAROWAN CITY
48.16 ACRES

RUN-ON CONTROL BERM
SEE DETAIL 1, SHEET 6

N 0°8'11" E
830.60'

5890
5880
3H:1V
MAX
3H:1V
MAX
CELL 3
200'
CELL 1
5880
5890
5900
400'
RUN-OFF
CONTROL BERM
SEE DETAIL 2,
SHEET 6
3H:1V
MAX
RUN-ON CONTROL
BERM SEE DETAIL 1,
SHEET 6
CELL 2
167'
5880
333'
5890
3H:1V
MAX
1317.75'
N 89°3
500'
RUN-ON CONTROL BERM
SEE DETAIL 1, SHEET 6
N 0°8'11" E
566.23'

PAROWAN C

PHASE A
(BELOW EXISTING GRADE)

EBAR
CAP)

REBAR
CAP)

PAROWAN CITY
48.16 ACRES

RUN-ON CONTROL BERM
SEE DETAIL 1, SHEET 6

N 0°8'11" E
830.60'

4H:1V
MAX
4H:1V
MAX
CELL 6
250'
4H:1V
MAX
CELL 4
5% SLOPE
5890
5930
5920
5910
5900
500'
RUN-OFF
CONTROL BERM
SEE DETAIL 2,
SHEET 6
RUN-ON CONTROL
BERM SEE DETAIL 1,
SHEET 6
CELL 5
167'
5920
333'
4H:1V
MAX
5910
1317.75'
N 89°3
5900
500'
RUN-ON CONTROL BERM
SEE DETAIL 1, SHEET 6
N 0°8'11" E
566.23'

PAROWAN C

PHASE B
(ABOVE EXISTING GRADE)

N
30 60 120
HORIZONTAL SCALE IN FEET

IRON COUNTY
SOLID WASTE

IRON COUNTY SOLID WASTE
3127 N IRON SPRINGS ROAD
CEDAR CITY, UT 84720
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NOTES:
2 FT. CONTOUR INTERVAL SHOW REPRESENTS RELATIVE ELEVATION AND IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.

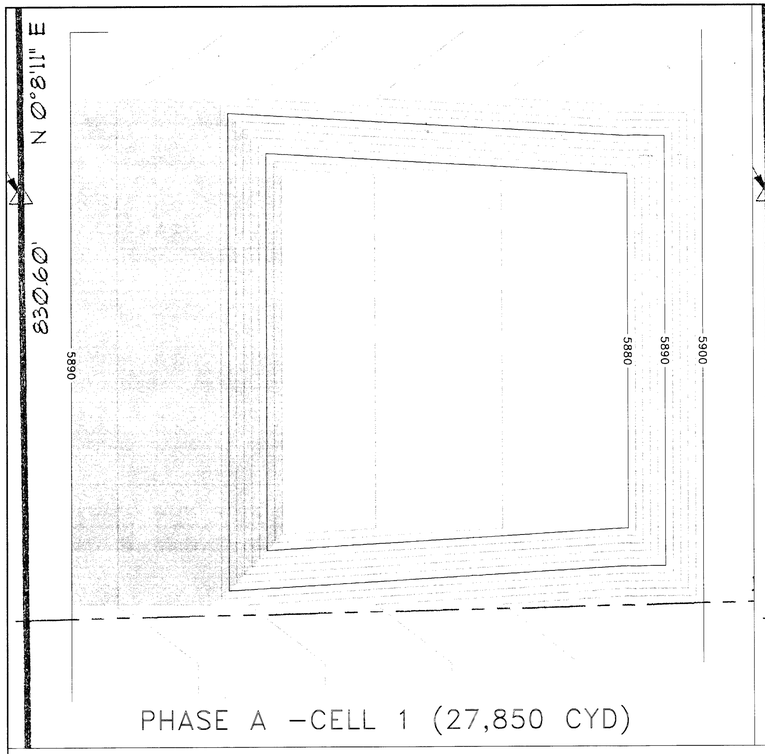
MARK	DATE	DESCRIPTION
	8/27/04	PERMIT
	8/9/04	DRAFT PERMIT

ISSUE:

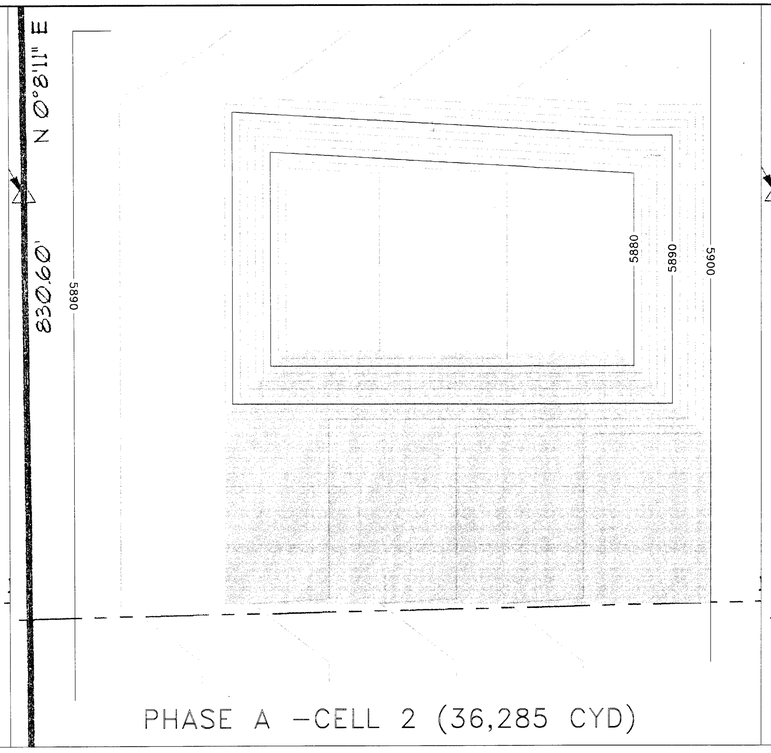
SHEET TITLE

IRON COUNTY CLASS IVb
GENERAL ARRANGEMENT

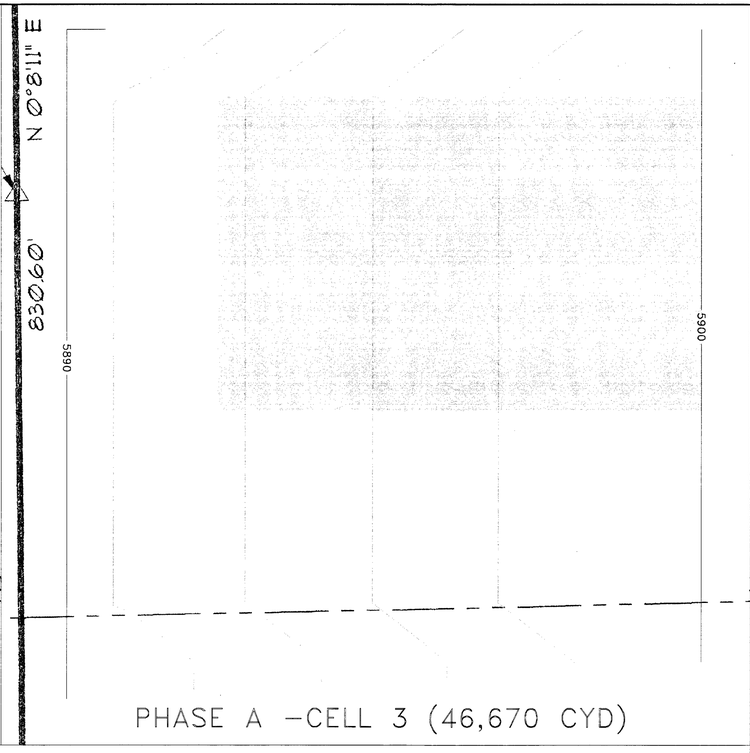
2



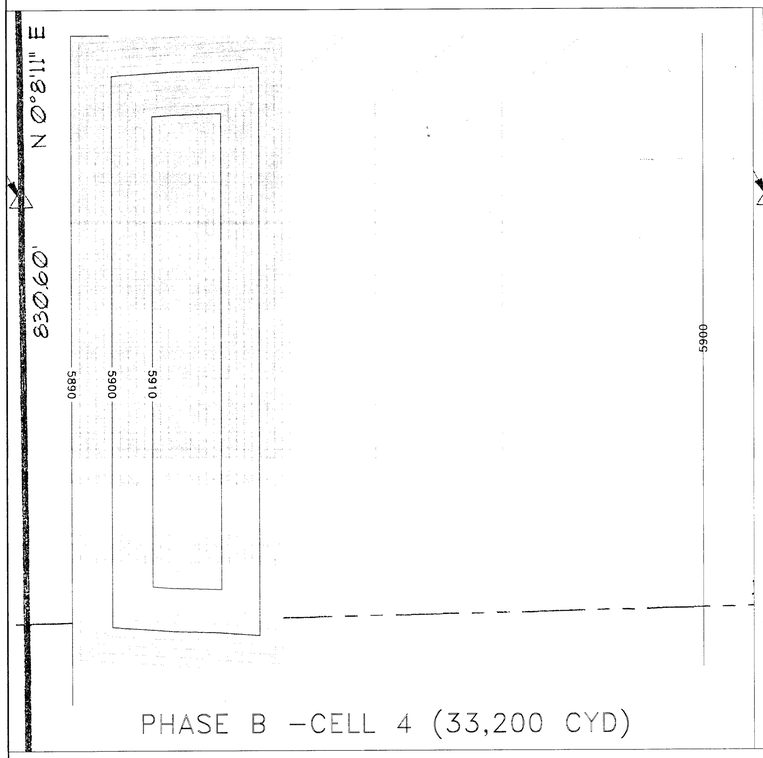
PHASE A –CELL 1 (27,850 CYD)



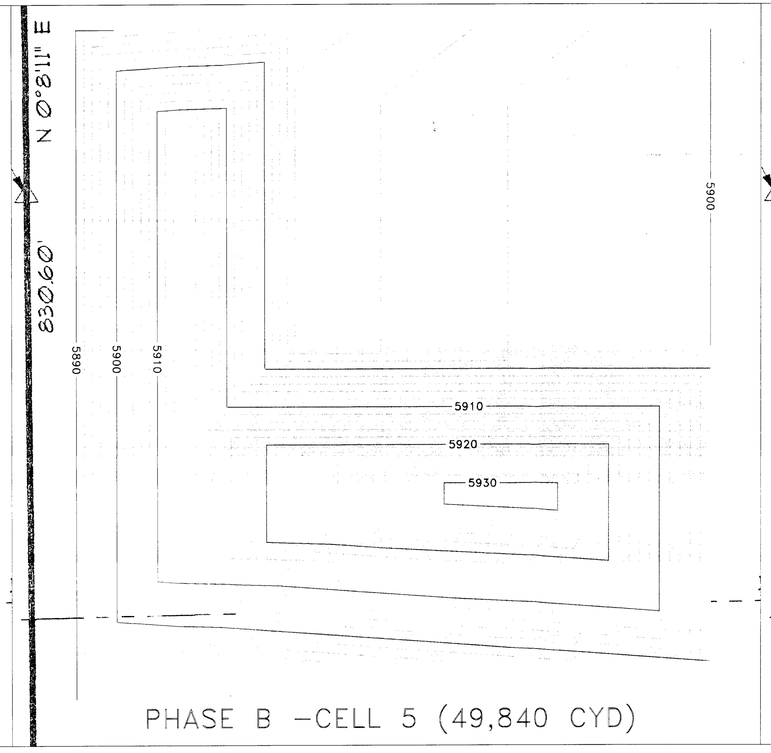
PHASE A –CELL 2 (36,285 CYD)



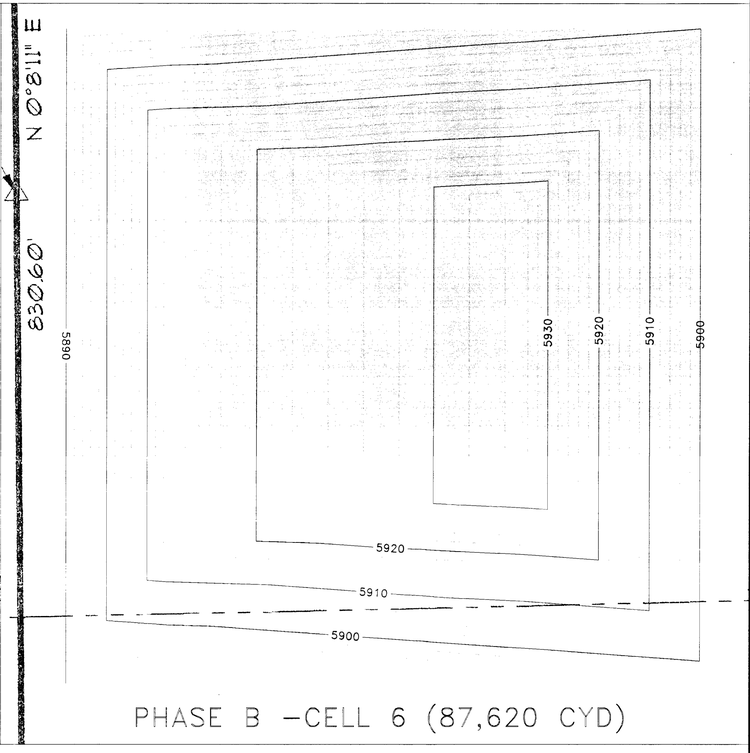
PHASE A –CELL 3 (46,670 CYD)



PHASE B –CELL 4 (33,200 CYD)



PHASE B –CELL 5 (49,840 CYD)



PHASE B –CELL 6 (87,620 CYD)

IRON COUNTY
SOLID WASTE

IRON COUNTY SOLID WASTE
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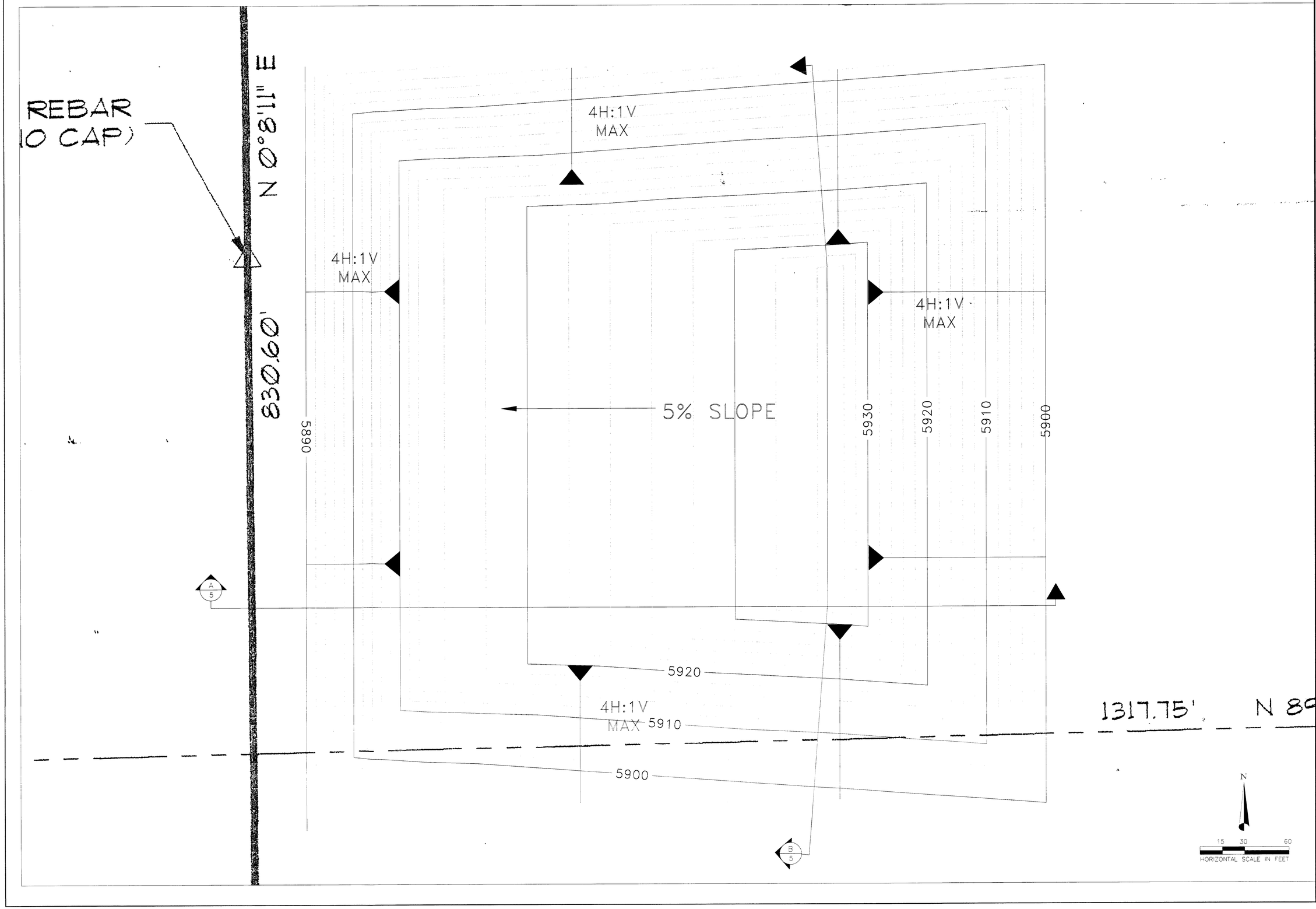
ISSUE:

SHEET TITLE

IRON COUNTY CLASS IVb

LANDFILL DEVELOPMENT

3



IRON COUNTY
SOLID WASTE

IRON COUNTY SOLID WASTE
3127 N IRON SPRINGS ROAD
CEDAR CITY, UT 84720
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	8/9/04	DRAFT PERMIT

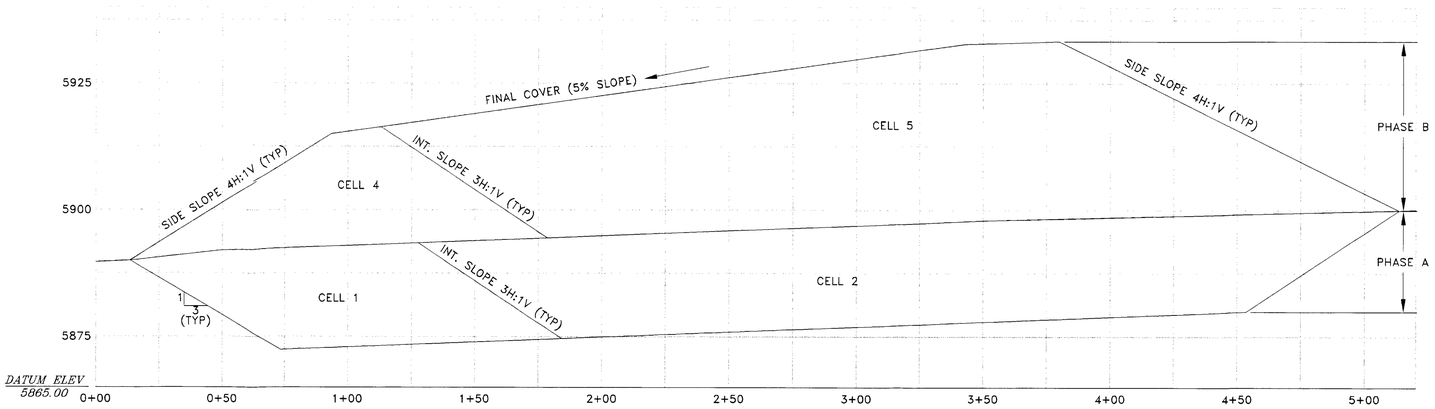
ISSUE:

SHEET TITLE

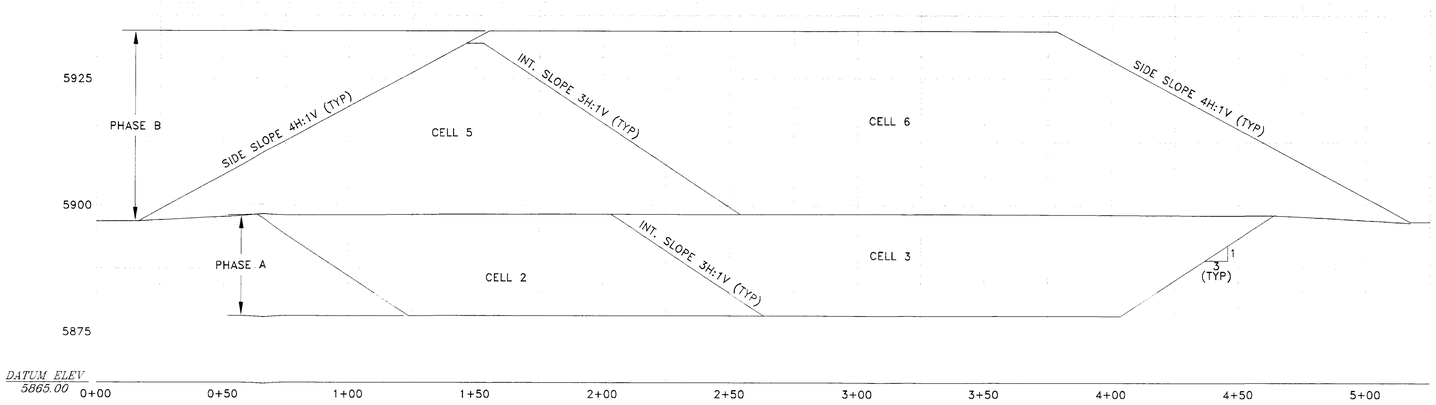
IRON COUNTY CLASS IVb

FINAL COVER

4



A/4 SECTION A



B/4 SECTION B

15 30 60
HORIZONTAL SCALE IN FEET
(2X VERTICAL EXAGGERATION)

IRON COUNTY SOLID WASTE
3127 N IRON SPRINGS ROAD
CEDAR CITY, UT 84720
(435) 865-7015

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NOTES:
ELEVATIONS REPRESENT RELATIVE ELEVATION AND ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.

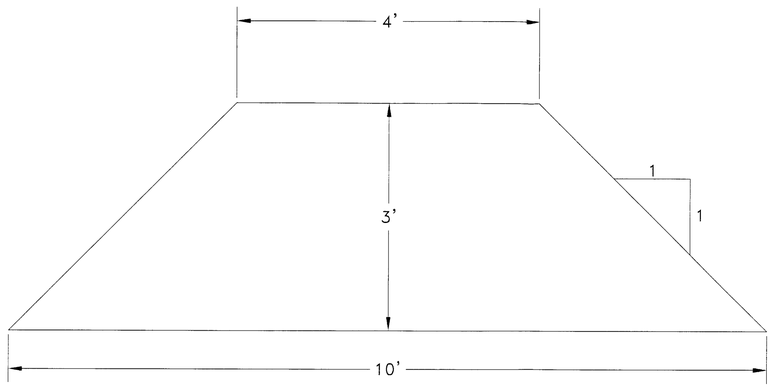
MARK	DATE	DESCRIPTION
	8/27/04	PERMIT
	8/9/04	DRAFT PERMIT

ISSUE:

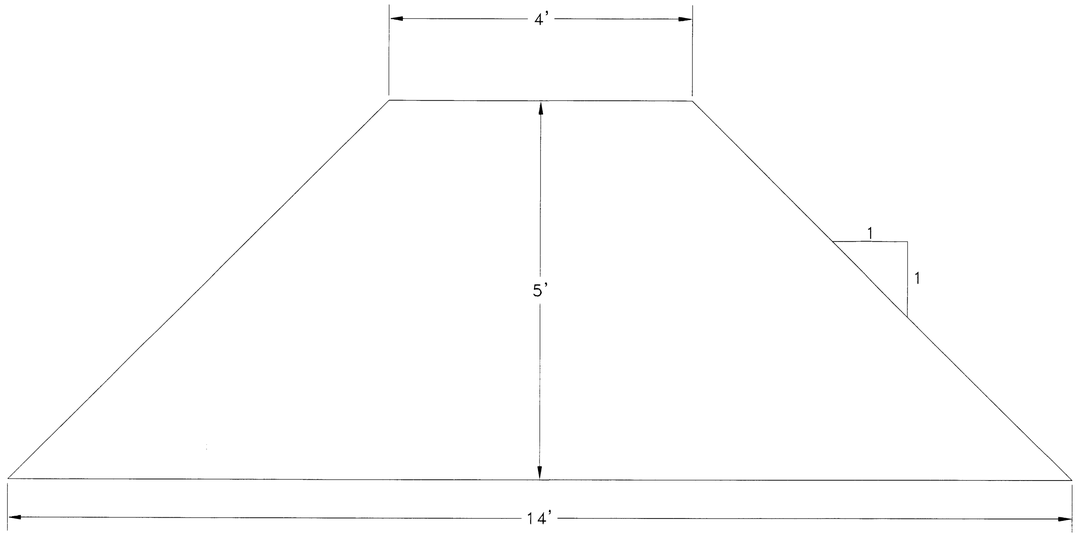
SHEET TITLE

IRON COUNTY CLASS IVb
SECTION VIEW

5



DT-1 / 2 RUN-ON CONTROL BERM-TYPICAL CROSS SECTION



DT-2 / 2 RUN-OFF CONTROL BERM-TYPICAL CROSS SECTION

IRON COUNTY
SOLID WASTE

IRON COUNTY SOLID WASTE
3127 N IRON SPRINGS ROAD
CEDAR CITY, UT 84720
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MARK	DATE	DESCRIPTION
	8/27/04	PERMIT
	8/9/04	DRAFT PERMIT

ISSUE:

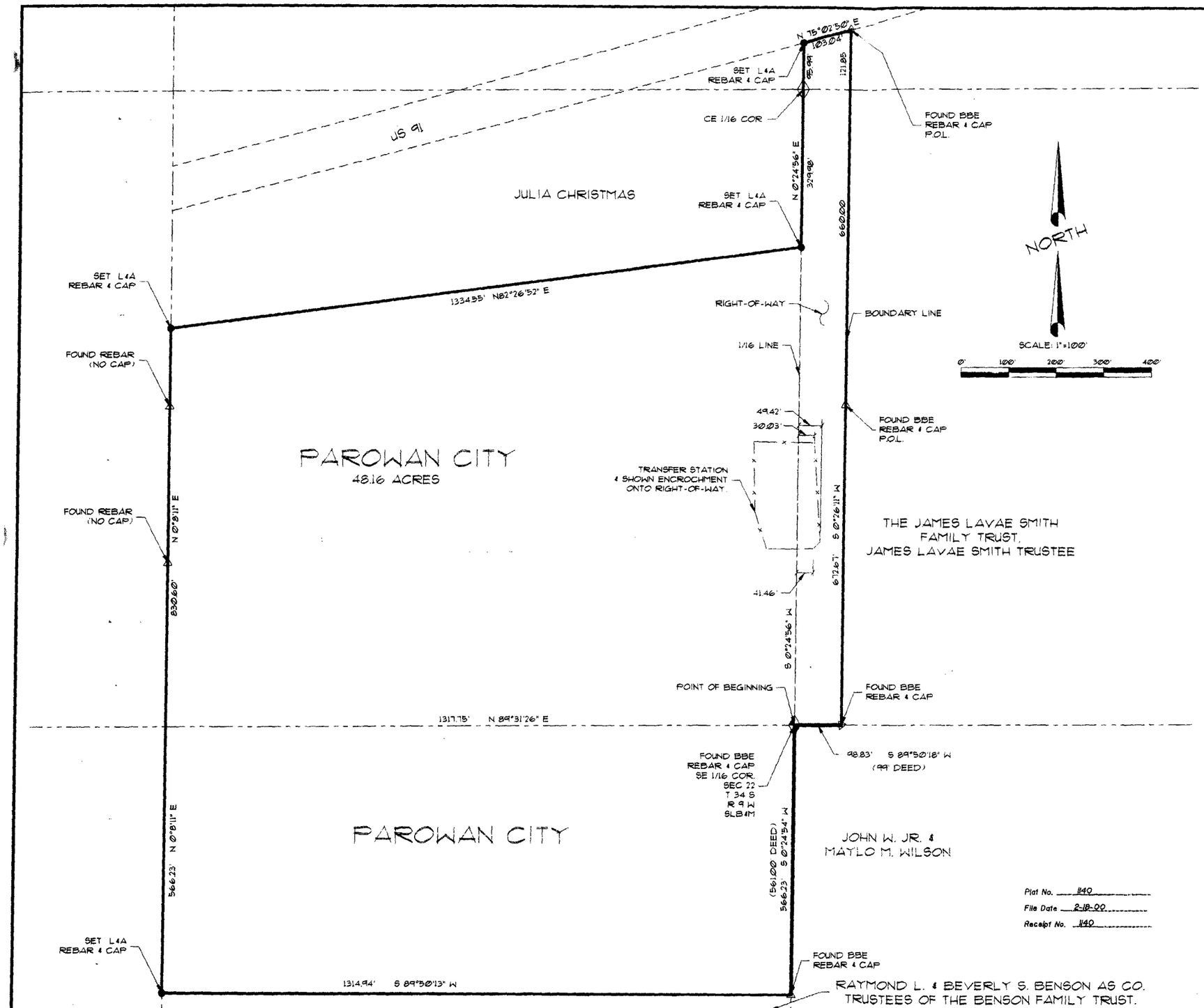
SHEET TITLE

IRON COUNTY CLASS IVb

DETAILS

6

APPENDIX B



Plat No. 1140

File Date 2-18-00

Receipt No. 1140

SURVEYOR'S CERTIFICATE

I, PHYLIP JOHN LESLIE DO HEREBY CERTIFY THAT I AM A REGISTERED LAND SURVEYOR THAT I HOLD CERTIFICATE NO. 150718 AS PRESCRIBED BY THE LAWS OF THE STATE OF UTAH, AND DO FURTHER CERTIFY THAT THIS PLAT IS A CORRECT REPRESENTATION OF DATA COMPILED FROM RECORDS ON FILE AT THE IRON COUNTY COURT HOUSE FROM DATA COLLECTED FROM A SURVEY PERFORMED IN THE FIELD

REGISTERED LAND SURVEYOR
PHYLIP JOHN LESLIE
4098
STATE OF UTAH
7/30/99

PROPERTY DESCRIPTION:

BEGINNING AT THE SOUTHEAST 1/16 CORNER OF SECTION 22, TOWNSHIP 34 SOUTH, RANGE 9 WEST, SALT LAKE BASE & MERIDIAN; THENCE SOUTH 0°24'54" WEST 566.23 FEET TO A FOUND REBAR AND CAP MARKED BBE, THENCE SOUTH 89°50'13" WEST 1314.94 FEET; THENCE NORTH 0°08'11" EAST 566.23 FEET TO THE 1/16 LINE OF SAID SECTION 22; THENCE NORTH 0°08'11" EAST 830.60 FEET; THENCE NORTH 82°26'52" EAST 1334.55 FEET; THENCE NORTH 0°24'56" EAST 329.98 FEET TO THE CENTER EAST 1/16 CORNER OF SAID SECTION 22, THENCE NORTH 0°24'56" EAST 95.99 FEET; THENCE NORTH 75°02'50" EAST 103.04 FEET TO A FOUND REBAR AND CAP MARKED BBE; THENCE SOUTH 0°26'11" WEST 121.85 FEET TO THE 1/16 LINE, THENCE CONTINUING SOUTH 0°26'11" WEST 660.00 FEET TO A FOUND REBAR AND CAP MARKED BBE; THENCE CONTINUING SOUTH 0°26'11" WEST 671.67 FEET TO A REBAR AND CAP MARKED BBE; THENCE SOUTH 89°50'18" WEST 98.83 FEET TO THE POINT OF BEGINNING. CONTAINING 48.16 ACRES.

BEING FORMERLY DESCRIBED AS FOLLOWS:

COMMENCING 20 RODS SOUTH FROM THE NORTHEAST CORNER OF THE NORTHWEST 1/4 SOUTHEAST 1/4 SECTION 22, TOWNSHIP 34 SOUTH, RANGE 9 WEST, SALT LAKE BASE AND MERIDIAN, THENCE SOUTHWESTERLY TO A POINT 30.15 RODS SOUTH OF THE NORTHWEST CORNER OF THE NORTHWEST 1/4 SOUTHEAST 1/4 OF SECTION 22, THENCE SOUTH 49.85 RODS, THENCE EAST 80 RODS, THENCE NORTH 60 RODS.

6 RODS OF THE NORTHEAST 1/4 SOUTHEAST 1/4 AND THE NORTH 34 RODS OF THE SOUTHWEST 1/4 SOUTHEAST 1/4 OF SECTION 22 TOWNSHIP 34 SOUTH, RANGE 9 WEST, SALT LAKE BASE AND MERIDIAN, EXCEPT THERE AFTER THAT PORTION THAT LIES WITHIN THE BOUNDARIES OF THE COUNTY ROAD.

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 22, TOWNSHIP 34 SOUTH, RANGE 9 WEST, SALT LAKE BASE AND MERIDIAN; THENCE NORTH 90 FEET TO THE SOUTH BOUNDARY OF THE RIGHT OF WAY FOR U.S. HIGHWAY 91, THENCE NORTHEASTERLY ALONG THE SOUTH RIGHT OF WAY BOUNDARY OF U.S. HIGHWAY 91 6 RODS, THENCE SOUTH 120 FEET, THENCE WEST 6 RODS TO THE POINT OF BEGINNING.

NARRATIVE:

1. THE PURPOSE OF THIS SURVEY WAS TO ESTABLISH THE CORNERS AROUND A PIECE OF PROPERTY PURPORTED TO BE OWNED BY PAROWAN CITY.

2. THE CORNERS WERE ESTABLISHED USING FOUND CORNERS AND A PREVIOUS SURVEY PERFORMED BY BULLOCH BROTHERS ENGINEERING, INC. PLAT NO. 204, WHICH IS ON FILE AT IRON COUNTY.

3. THE BASIS FOR BEARINGS IS SOUTH 0°24'56" WEST BETWEEN THE CENTER-EAST 1/16 CORNER OF SECTION 22, TOWNSHIP 34 SOUTH, RANGE 9 WEST, SALT LAKE BASE AND MERIDIAN AND THE SOUTH-EAST 1/16 CORNER OF SAID SECTION 22, WHICH WAS TAKEN FROM A RECORD OF SURVEY PLAT NO. 204 FILED BY BULLOCH BROTHERS ENGINEERING.

4. THIS SURVEY DOES NOT CONSTITUTE PROOF OF OWNERSHIP.

LEGEND:

- R/W LINES & LOT LINES
- FENCE LINES
- PROPERTY LINES
- SET 1/2" REBAR WITH PLASTIC CAP STAMPED "RLS 150718"
- FOUND PROPERTY CORNER SET BY BULLOCH BORTHERS ENGINEERING, INC STAMPED "BBE"
- R/W MARKERS FOUND
- SECTION LINES
- R/W MARKERS RE-ESTABLISHED (NOT SET)
- EASEMENT LINES
- CORNERS SET BY PREVIOUS SURVEY
- FOUND SECTION CORNERS
- REESTABLISHED SECTION CORNERS

JOB NUMBER: 172-02-01
DRAWN BY: Ryan Judd DATE: JUNE 08, 1999
CHECKED BY: DATE:

REVISIONS: DATE:

CONSULTANTS:

LESLIE & ASSOCIATES
444 South Main Street
Cedar City, Utah 84720
Phone: (435)586-9474
FAX: (435)586-8399
CIVIL ENGINEERS
LAND SURVEYORS

PROJECT: BOUNDARY SURVEY FOR PAROWAN CITY DUMP
SECTION 22, T34S, R9W SLB&M PAROWAN, UTAH

SHEET TITLE: RECORD OF SURVEY

1 OF 1

PARCEL OWNERSHIP QUERY DATE: 08/20/04

SERIAL NUMBER ACCOUNT# YEAR ACREAGE DIST PARCEL ADDRESS

A-0516-0009-0000 0098811 2002 50.26 01

OWNER: PAROWAN CITY

TAX NOTICE MAILED TO: PAROWAN CITY
PO BOX 576
PAROWAN UT 84761-0576

BOOK: 00791 PAGE: 00006

ENTRY NUMBER: 00445156

P A R C E L D E S C R I P T I O N :

COM 20 RDS S FROM NE COR NW1/4SE1/4 SEC 22, T34S, R9W, SLM. S'WLY TO PT 30.15 RDS S NW COR NW1/4SE1/4 SEC 22, S 49.85 RDS, E 80 RDS, N 60 RDS, ALSO WEST 6 RDS OF NE1/4SE1/4 & THE N 34 RDS, OF SW1/4 SE1/4 SEC 22, T34S, R9W, SLM.EXCEPT THER EFR THAT PORTION LIES WITHIN BDRYS OF PAROWAN CITY. (WAS C-1079-2) SUBJ TO EASE REC BK 791/6.

1 = Browse Down 5 = Print Parcel Displayed
2 = Browse Up 6 = View Parcel Abstract
3 = View More Owner Names 7 = Return to Parcel Owner Menu
4 = View More Legal Description

Select:

Integers 0-9 only

I , ,ASD,P02,E ,RECORD7.2 GSN 1 new

APPENDIX C

Iron County Class IV B Daily Records. Date / /

#1 dirt & rock # 2 contractor debris # 3 demolition # 4 yard & tree cuttings # 6 dead animals # 9 Business household placed in roll-off bins # 12 metals

Receipt Numbers_____

Hauler Name	Vehicle ID #	Bill	Type	Time	Yardage
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Daily Total Yardage_____

IRON COUNTY LANDFILL
INSPECTION FORM

PERFORMED BY:_____ DATE:_____

		OVERALL CONDITION	
		SATISFACTORY	NEEDS WORK
1.	STRUCTURES AND ROADS		
	1. BUILDINGS	_____	_____
	2. FENCES	_____	_____
	3. GATES	_____	_____
	4. ROADS	_____	_____
		_____	_____

SPECIFY RECOMMENDED REPAIRS AND/OR LIST ACTIONS TAKEN:

_____

_____

2.	OPERATIONS		
	1. LITTER AND WEED	_____	_____
	2. EXCAVATIONS	_____	_____
	3. DAILY COVER	_____	_____
	4. FINAL COVER	_____	_____
	5. SEGREGATED WASTE		
	A. SCRAP METAL	_____	_____
	B. APPLIANCES	_____	_____
	C. DEAD ANIMAL PIT	_____	_____
	D. USED BATTERY SKID	_____	_____
	E. TREE LIMB/PALLETS	_____	_____
		_____	_____

SPECIFY RECOMMENDED REPAIRS AND/OR LIST ACTIONS TAKEN:

_____

_____

_____

IRON COUNTY LANDFILL

RANDOM LOAD INSPECTION RECORD

INSPECTION INFORMATION	
INSPECTOR'S NAME:	
DATE OF INSPECTION:	
TIME OF INSPECTION:	
FACILITY NAME:	
TRANSPORTATION COMPANY INFORMATION	
COMPANY NAME:	
ADDRESS:	
PHONE NUMBER:	
VEHICLE INFORMATION	
DRIVER'S NAME:	
VEHICLE TYPE:	
VEHICLE LICENSE NUMBER:	
VEHICLE CONTENTS:	☐HOUSEHOLD ☐COMMERCIAL ☐OTHER_____
OBERVATIONS AND ACTIONS TAKEN	

INSPECTOR'S SIGNATURE:_____ DATE:_____

I CERTIFY THAT THIS LOAD CONTAINS NO HAZARDOUS WASTES AND IF ANY ARE FOUND IN THIS INSPECTION THAT I OR COMPANY WILL DISPOSE OF SUCH ACCORDING TO STATE AND FEDERAL LAW.

SIGNATURE._____

APPENDIX D

TAHOMA COMPANIES, INCORPORATED
P.O. Box 486; Mile 5 Hwy 14
Cedar City, Utah 84721
(435) 865-0131 ☎ Fax (435) 865-0161
email: tahoma@cedarcity.net

FIGURE 6

IRON COUNTY CLASS IVB LANDFILL
LOG OF TEST PITS

Date: August 2, 1999

Test Pit 1

G.L. - 18"	Silty sand, tan, dry, loose (SM).
18" - 9'	Gravel, sandy, tan to light brown, slightly silty, loose, dry, gravel and cobbles to 8" in diameter (GW). Easily excavated to 8' 6"; refusal on weathered volcanic rocks at 9' below ground level.

Test Pit 2

G.L. - 1'	Silty sand, tan, dry, loose (SM).
1' - 12'	Gravel, sandy, tan to light brown, slightly silty, loose, dry, gravel and cobbles to 12" in diameter (GW). Easily excavated to 12'.

Test Pit 3

G.L. - 1'	Silty sand, tan, dry, loose to slightly cemented with caliche (SM).
1' - 13.5'	Gravel, sandy, tan to light brown, clean sandy matrix, loose, dry, gravel and cobbles to 18" in diameter (GW). Trace caliche coatings to 3'. Easily excavated to 13.5'. Bulk sample at 11' below ground.

Test Pit 4

G.L. - 6'	Sand, silty, gravelly, loose, dry, tan (SM). Trace caliche from 2' to 3' below ground level. Alluvial soils.
6' - 8'	Weathered andesite bedrock: Gravel, with light tan clay, sand, and residual fragments of reddish-brown andesite bedrock (GM). Refusal at 8' below ground level on andesite bedrock.

Test Pit 5

G.L. - 1'	Silty sand, tan, dry, loose (SM).
1' - 6'	Gravel, sandy, tan to light brown, slightly silty, loose, dry, gravel and cobbles to 12" in diameter (GW). Easily excavated to 6'.
6' - 9'	Weathered andesite bedrock: Gravel, with light tan clay, sand, and residual fragments of reddish-brown andesite bedrock (GM). Refusal at 9' below ground level on andesite bedrock.

Test Pit 6

G.L. - 1'	Silty sand, tan, dry, loose (SM).
1' - 7'	Gravel, sandy, tan to light brown, clean sandy matrix, loose, dry, gravel and cobbles to 18" in diameter (GW). Trace caliche coatings to 3'.
7' - 10' 8"	Weathered andesite bedrock: Gravel, with light tan clay, sand, and residual fragments of reddish-brown andesite bedrock (GM). Easily excavated to 10'. Refusal at 10' 8" below ground level on andesite bedrock.

Notes: G.L. = Ground Level; SM = silty sand; GW = well graded gravel; GM = silty gravel; Andesite = a fine grained volcanic rock containing large crystals (phenocrysts) of transparent plagioclase feldspar. Refusal = inability to excavate bedrock with a Case 580 or equivalent backhoe; Caliche = naturally occuring, white, calcium carbonate cement.

The locations of the test pits are shown on Figure 5.

APPENDIX E

PHASE B - LANDFILL CLOSURE COSTS (WEST 1/2)

Section 1.0 - Engineering — **PHASE B**

(ESTIMATED DATE OF CLOSURE= 2007, AREA= 945,000 FT SQ)

Item	Description	Unit Measure	Cost/Unit	No. Units	Total Cost
1.1	**Topographic Survey**	LS	$0	0	$0
1.2	**Boundary Survey for Closure**	NA	$0	0	
1.3	**Site Evaluation**	NA	$0	0	$0
1.4	**Development of Plans** (Cover and Gas Collection)	LS	$1,000	1	$1,000
1.5	**Contract Administration** - (Bidding and Award)	LA	$0	0	$0
1.6	**Administrative Costs** - (Certification of Final Cover and Closure Notice)	LS	$0	1	$0
1.7	**Project Management** - (Construction Observation and Testing)	LS	$3,200	1	$3,200
1.8	**Monitor Well Consultant Cost**	NA	$0	0	$0
1.9	**Other Environmental Permit Costs**	NA	$0	0	$0
				Engineering Subtotal	$4,200

Section 2.0 - Construction — **PHASE B**

Item	Description	Unit Measure	Cost/Unit	No. Units	Total Cost
2.1	**Final Cover System**				
2.1.1	***Site Preparation/ Site Regrading***	ACRE	$1,000	2.8	$2,750
2.1.2	*Gas Collection Layer/Pipes*	Included below			$0
2.1.3	*Low permeability Layer (Soil - If Applicable)*				
a	Soil Purchase	NA			$0
b	Soil Processing (load)	NA			$0
c	Soil Transportation	NA			$0
d	Soil Placement	NA			$0
e	Soil Amendment (compact)	NA			$0
2.1.4	***Low permeability Layer (Synthetic - If Applicable)***				
a	Geotextile	NA			$0
b	GCL	SQ FT	$0.00	0	$0
c	Geomembrane(HDPE,PVC,LLDPE,etc...)	SQ FT	$0.00	0	$0
2.1.5	***Drainage Layer (Soil - If Applicable)***				
a	Geotextile	NA			$0
b	Sand/Gravel	NA			$0
2.1.6	***Drainage Layer (Synthetic - If Applicable)***				
a	Geotextile	NA			$0
b	Geonet/Geocomposite	SQ FT	$0.00	0	$0
2.1.7	***Erosion Protection Soil Layer***				
a	Soil Purchase	NA			$0
b	Soil Processing (load)	CY	$0.50	6,655	$3,328
c	Soil Transportation	CY	$1.00	6,655	$6,655
d	Soil Placement	CY	$0.75	6,655	$4,991
e	Soil Amendment (compact)	CY			$0
2.1.8	***Topsoil Layer***				
a	Soil Purchase	NA			$0
b	Soil Processing (load)	CY	$0.50	2,218	$1,109
c	Soil Transportation	CY	$1.00	2,218	$2,218
d	Soil Placement	CY	$0.75	2,218	$1,664
e	Soil Amendment	NA			$0
2.1.9	***Revegetation***				
a	Seeding	ACRE	$800	2.8	$2,200
b	Fertilizing	ACRE	$800	2.8	$2,200
c	Mulch	ACRE	$200	2.8	$550
d	Tacifier	ACRE	$200	2.8	$550
2.2	**Stormwater Protection Structures**				
a	Culverts	NA			$0
b	Pipes	NA			$0
c	Ditches/Berms	FT	$0	0	$0
d	Detention Basins	NA			$0
2.3	**Gas Collection System**				
a	Design	Included In Section 1.0			$0
b	Additional Gas Collection Wells and Connection	EA	$0	0	$0
2.4	**Leachate Collection System**				
a	Design	NA			$0
b	Additional Equipment / Installation	NA			$0
2.5	**Groundwater Monitoring System**				
a	Monitor Well Installation	NA			$0
b	Monitor Well Abandonment	NA			$0
2.6	**Site Security**				
a	Lighting, signs, etc...	NA			$0
b	Fencing and Gates	NA			$0
2.7	**Miscellaneous**				
a	Performance Bonds	LS	$0	0	$0
b	Contract/Legal fees	LS	$1,000	1	$1,000
				Construction Subtotal	$29,215

LS - LUMP SUM
NA - NOT APPLICABLE
EA - EACH
CY - CUBIC YARD
FT - FEET

Total	$33,415
10% Contingency	$3,342
Subtotal Closure Cost	$36,757

PHASE B - LANDFILL CLOSURE COSTS (EAST 1/2)

Section 1.0 - Engineering — **PHASE B**

(ESTIMATED DATE OF CLOSURE=2015, AREA=765,000 FT SQ)

Item	Description	Unit Measure	Cost/Unit	No. Units	Total Cost
1.1	**Topographic Survey**	LS	$3,500	1	$3,500
1.2	**Boundary Survey for Closure**	NA	$500	1	$500
1.3	**Site Evaluation**	NA	$0	1	$0
1.4	**Development of Plans** (Cover and Gas Collection)	LS	$1,000	1	$1,000
1.5	**Contract Administration** - (Bidding and Award)	LA	$0	1	$0
1.6	**Administrative Costs** - (Certification of Final Cover and Closure Notice)	LS	$1,500	1	$1,500
1.7	**Project Management** - (Construction Observation and Testing)	LS	$3,200	1	$3,200
1.8	**Monitor Well Consultant Cost**	NA	$0		$0
1.9	**Other Environmental Permit Costs**	NA	$0		$0
				Engineering Subtotal	$9,700

Section 2.0 - Construction — **PHASE B**

Item	Description	Unit Measure	Cost/Unit	No. Units	Total Cost
2.1	**Final Cover System**				
2.1.1	*Site Preparation/ Site Regrading*	ACRE	$1,000	2.8	$2,750
2.1.2	*Gas Collection Layer/Pipes*	Included below			
2.1.3	*Low permeability Layer (Soil - If Applicable)*				
a	Soil Purchase	NA			$0
b	Soil Processing (load)	NA			$0
c	Soil Transportation	NA			$0
d	Soil Placement	NA			$0
e	Soil Amendment (compact)	NA			$0
2.1.4	*Low permeability Layer (Synthetic - If Applicable)*				
a	Geotextile	NA			$0
b	GCL	NA			$0
c	Geomembrane(HDPE,PVC,LLDPE,etc...)	NA			$0
2.1.5	*Drainage Layer (Soil - If Applicable)*				
a	Geotextile	NA			$0
b	Sand/Gravel	NA			$0
2.1.6	*Drainage Layer (Synthetic - If Applicable)*				
a	Geotextile	NA			$0
b	Geonet/Geocomposite	NA			$0
2.1.7	*Erosion Protection Soil Layer*				
a	Soil Purchase	NA			$0
b	Soil Processing (load)	CY	$0.50	6,655	$3,328
c	Soil Transportation	CY	$1.00	6,655	$6,655
d	Soil Placement	CY	$0.75	6,655	$4,991
e	Soil Amendment (compact)	CY			$0
2.1.8	*Topsiol Layer*				
a	Soil Purchase	NA			$0
b	Soil Processing (load)	CY	$0.50	2,218	$1,109
c	Soil Transportation	CY	$1.00	2,218	$2,218
d	Soil Placement	CY	$0.75	2,218	$1,664
e	Soil Amendment	NA			$0
2.1.9	*Revegetation*				
a	Seeding	ACRE	$800	2.8	$2,200
b	Fertilizing	ACRE	$800	2.8	$2,200
c	Mulch	ACRE	$200	2.8	$550
d	Tacifier	ACRE	$200	2.8	$550
2.2	**Stormwater Protection Structures**				
a	Culverts	NA			$0
b	Pipes	NA			$0
c	Ditches/Berms	FT	$0	0	$0
d	Detention Basins	NA			$0
2.3	**Gas Collection System**				
a	Design	Included In Section 1.0			$0
b	Additional Gas Collection Wells and Connection	LS	$0	0	$0
2.4	**Leachate Collection System**				
a	Design	NA			$0
b	Additional Equipment / Installation	NA			$0
2.5	**Groundwater Monitoring System**				
a	Monitor Well Installation	NA			$0
b	Monitor Well Abandonment	NA			$0
2.6	**Site Security**				
a	Lighting, signs, etc...	NA	$1,000	1	$1,000
b	Fencing and Gates	NA	$1,000	1	$1,000
2.7	**Miscellaneous**				
a	Performance Bonds	LS		1	$0
b	Contract/Legal fees	LS	$1,000	1	$1,000
				Construction Subtotal	$31,215

LS - LUMP SUM
NA - NOT APPLICABLE
EA - EACH
CY - CUBIC YARD
FT - FEET

Total	$40,915
10% Contingency	$4,092
Subtotal Closure Cost	$45,007

PAROWAN LANDFILL CLOSURE AND POST-CLOSURE COSTS

West Half Phase B Closure Costs - 2022		
Section 1.0 - Engineering	$4,200	
Section 2.0 - Construction	$29,215	
10% Contingency	$3,342	
Subtotal		$36,757
East Half Phase B Closure Costs - 2029		
Section 1.0 - Engineering	$9,700	
Section 2.0 - Construction	$31,215	
10% Contingency	$4,092	
Subtotal		$45,007
Landfill Post-Closure Costs (30 years)		$20,460
TOTAL LANDFILL CLOSURE AND POST-CLOSURE COSTS		$102,223